

# RESERVE COPY PATENT SPECIFICATION



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## PROVISIONAL SPECIFICATION

### Improvements in or relating to Apparatus for Playing Games of Skill

We, FREDERICK EDWARD SPENCER, of 42, Middleton Boulevard, Wollaton Park, Nottingham, a British Subject, and LEWIS HENRY COLTON, of "Keppler", 5 Loughborough Road, West Bridgford, Nottingham, a British Subject, do hereby declare the nature of this invention to be as follows:—

10 This invention comprises improvements in or relating to games of skill and refers more particularly to that class of game in the playing of which members are cast or projected on to a board or target with the object of piercing same or being 15 retained thereon; an object of the invention being to render such games more interesting and entertaining.

20 Viewing the invention from one aspect, same consists in the provision in or for a game of the class referred to of a board or target having associated therewith one or more parts or elements functioning to receive and retain a successfully cast member or projectile (e.g. a dart or quoit), 25 and operating by virtue of the impact or engagement therewith of the said cast or projected member, automatically to bring into operation means functioning to register and/or visibly indicate a score 30 made by the cast, and/or means which effect or control the delivery of a token or article.

35 Advantageously the part or each of same on the board constituting the object at which a member is cast or projected is movable relatively to said board by the impact or engagement of said member and the movement imparted to said part automatically controls the operation of a 40 scoring device and/or article delivery mechanism.

45 Viewing the invention from another aspect, same comprises in or for a game of the kind referred to a board or target having at the face thereof one or more 50 relatively movable parts or elements adapted to be displaced by a projectile or thrown member hitting, and/or engaging and/or piercing same and being retained thereby, and concealed or enclosed mechanism adapted by the movement imparted to each or selected of such parts or elements to bring into operation a visible

score indicator or device and/or a device 55 for delivery of a token or prize.

The operation of the mechanism associated with the board is effected electrically mechanically and the invention also includes means whereby, when a device is incorporated for delivering a token or other article, such device is rendered operative only by the insertion of one or more coins of pre-determined value.

60 In one method of carrying out the invention same will be described by way of example with reference to a dart board constructed or arranged for enabling a game to be played thereon simulating the game of cricket, it being understood that 70 in playing such game the players take sides so that one or more players constitute the "Batting" side and one or more others the "Bowling" or "Fielding" side, the successful cast of a dart by a member of one side being counted as a 75 pre-determined number of runs scored, and a successful dart cast by a member of the opposing side representing the taking of a wicket. The board has a surface constituted wholly or in part of material 80 capable of being penetrated by the darts and at one or more selected positions there are small defined areas of different sizes and/or shape, certain of which are adapted to be pierced by the darts of the 85 "Batting" side and another or others by the darts of the "Bowling" side, the defined areas for the "Batting" side having different score values. At the rear of the board is a ratchet wheel or ring 90 gear having on or associated with its front face a series of progressively increasing figures, say from 1—200, there being an opening in the board through which any one of said numbers is visible as the ring 95 is rotated, the word "runs" being provided on the board adjacent to said opening. A second annular ratchet wheel or ring gear is also provided advantageously 100 concentric with the first gear, and on or associated with the front face of this second ring there is a series of numbers from 1—10, or a plurality of such series, and one of said numbers being visible through the opening in said board at a 105 position preferably diametrically opposed

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to the first-named opening. The numbers associated with the second named ring refer to the wickets, the word "wickets" being located adjacent to the opening through which the number is visible.

Each of the small defined areas in the board at which the darts are cast, and which areas will hereinafter for convenience be referred to as "bulls", is constituted by a circular or cylindrical element capable of being pierced by a dart and adapted when pierced to be displaced axially towards the rear of the board, the bull being slidably guided in its movement within a metal or equivalent sleeve, and the front circular edge of said sleeve having an inclined or bevelled lip designed to prevent the dart from entering between the bull and the guiding sleeve. Each bull is normally pressed forward by a suitable spring so as to lie with its front face flush with the face of the board, the aforesaid lip on the sleeve determining the extent to which the bull can be moved forward.

When a dart is successfully cast and pierces a bull, the latter is by the impact moved rearwardly and closes two electrical contact elements. This completes an electrical circuit and energises one or more solenoids or electro-magnets and by so doing, through the intermediary of a clawer or equivalent member associated with said solenoid or the like, racks, either directly or indirectly, the ratchet wheel or ring gear appertaining to the runs or wicket.

Certain of the bulls relate to runs scored, while another or others to wickets. consequently if one of the first-named bulls is struck, the ring bearing the successive figures denoting runs scored is partially rotated, whereas if the second-named bull or one of same is hit, then that ring is rotated which bears the numbers representing the wickets taken. The bulls appertaining to the runs are advantageously of different sizes and the arrangement may be such that when the smallest bull is struck, the ring appertaining to the runs is rotated to a greater distance than is the case when a larger bull is struck. For example, the striking of one bull may register the scoring of 4 runs (a boundary) while the striking of another and larger bull may register two

runs, and a further still larger bull, one run. Where only one bull is provided for the wickets the striking of same rotates the wicket indicator to register one wicket being taken. There may, however, be one or more other bulls representing "catching" and/or "stumping", the striking of such additional bull or bulls rotating the wicket indicator to the extent of one wicket.

The invention also includes means whereby tokens or prizes are delivered to successful players at pre-determined intervals, and the token delivery mechanism is advantageously put into operation by the insertion of one or more coins. For example, a device may be incorporated whereby the insertion of a coin constitutes a connection between a swivelling or rotatable handle or associated part, and a rotatably mounted arm or the like, the latter having a pawl and ratchet engagement with a further rotatable member which, on the insertion of a coin and movement of the handle is partially rotated so as to bring into position an electric contact device adapted, when a bull is successfully struck to close an electric circuit for imparting traversing movement or partial rotation to a token delivery device.

It is to be understood that a coin-freed token delivery device may be employed either in combination with a dart board which gives a visual indication of the score as before described, or in connection with a board without such score indicator.

Suitable means are also advantageously provided for ensuring that a player must stand at a pre-determined distance from the target when casting a dart, and one method of accomplishing this is by extending an electric lead to a position at which the player is to stand and providing at such a position a contact member which when depressed by the foot of the player or by a member engaged by said foot completes an electric circuit and puts the apparatus into position for operation.

There may also be provided one or more suitably disposed and shaded lamps for illuminating the face of the board.

Dated this 28th day of July, 1937.  
FREDERICK EDWARD SPENCER.  
LEWIS HENRY COLTON.

#### COMPLETE SPECIFICATION

#### Improvements in or relating to Apparatus for Playing Games of Skill

We, FREDERICK EDWARD SPENCER, of 42, Middleton Boulevard, Wollaton Park, Nottingham, a British Subject, and

LEWIS HENRY COLTON, of "Keppler", Loughborough Road, West Bridgford, Nottingham, a British Subject, do hereby

declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention comprises improvements in or relating to games of skill of the kind wherein pointed darts are cast on to a board or target with the object of piercing same and being retained thereon; an object of the invention being to render such games more interesting and entertaining.

In its broadest aspect the invention consists in the provision of a target or board for use in connection with a game of the kind referred to, having a part which is moved relatively to said target by the impact or engagement of a successfully cast dart and closes an electrical circuit which operates an article delivery mechanism and/or a scoring device. The invention also includes means whereby, when a device is incorporated for delivering a token or other article, such device is rendered operative only by the insertion of one or more coins of pre-determined value.

For the purpose of fully describing this invention reference will now be made to the accompanying drawings illustrating simple embodiments of the invention.

Fig. 1, is a front elevation of a dart board or target to which the invention has been applied,

Fig. 2, is sectional elevation on a larger scale and partly diagrammatic illustrating a displaceable "bull" of the dart board shewn in Fig. 1, and the electrically operated token delivering device,

Fig. 3, is another enlarged sectional detail view of the "bull" in its operated position,

Fig. 4, illustrates a simple type of score indicating device which may be incorporated in a dart board in accordance with this invention, and

Fig. 5, shows a further simple arrangement whereby the dart board may be coin operated.

Each of the small defined areas 1 or 2 in the board 3 at which the darts are particularly directed and which areas will hereinafter for convenience be referred to as "bulls", is constituted by a circular or cylindrical element 4, see Figs. 2 and 3, capable of being pierced by a dart and adapted when pierced to be displaced axially towards the rear of the board, the bull being slidably guided in its movement within a metal or equivalent sleeve 5, and the front circular edge 5a of said sleeve having an inclined or bevelled lip designed to prevent the dart from entering between the bull 4 and the guiding sleeve

5. Each bull is normally pressed forward by a suitable spring 6 so as to lie with its front face flush with the face of the board, the aforesaid lip 5a on the sleeve 5 determining the extent to which the bull can be moved forward.

When a dart is successfully cast and pierces a bull 4, the latter is by the impact moved rearwardly and closes two electrical contact elements 7 and 7a. This completes an electrical circuit for which the current is supplied by a battery B or other supply and energises one or more solenoids or electro-magnets S. The energising of the solenoids S attracts the iron core 8 and a part 8a connected to said core displaces the lowermost token 9 of a column of tokens contained in a suitably positioned delivering tube 10. Upon being rapidly displaced by the part 8a the token 9 is ejected onto a delivery slide 11 suitably positioned in relation to the tube 10. The core 8 and connected part 8a are returned to their initial position when the electrical circuit is broken by the action of the spring 6, under the influence of a suitable spring 12. The token delivering device, which may be positioned quite remote from the dart board 3, is suitably enclosed in a casing 13.

The movable cylindrical bull is preferably provided with a renewable cork plug 4a, see Figs. 2 and 3, and air ducts 5b are provided in the rear part of the sleeve 5 to prevent any air braking effect on the bull 4 that may be set up owing to the close fit of the said bull 4 in the sleeve 5.

The embodiment of the invention illustrated is one of the simplest methods of carrying it out and is intended for use as a game of skill on fair ground, or in a hotel bar, shops, entertainment arcade, booth or the like. The proposed procedure is that a person wishing to try his or her skill pays an attendant a certain coin or amount and is handed a certain number of darts. These the player projects onto the board 3 and if he or she is successful in projecting a dart onto the bull 4, the electrical circuit is completed and a token 9 is automatically delivered to the player in exchange for which the attendant gives the player a prize in accordance with the predetermined value of the token.

In addition to the token delivering solenoid S an electrical bell or other audible device B<sup>1</sup>, Fig. 2, may be included in the electrical circuit and be operated simultaneously with the delivery of the token when the bull 4 is displaced. Any desired number of bulls 4 may be provided at predetermined positions around the target 3 and each bull may have associated with it a solenoid S for delivering a token or more than one bull

may be connected to only one solenoid.

It will readily be apparent to an electrician that instead of the one or more solenoid S operating a token delivery device it or they may readily be adapted to move a score indicating device and enable games to be played on the target 3 and give visible changing scores in accordance with the bulls that are successfully pierced by the darts cast during the course of the game.

For example, upon the contacts 7 and 7a being closed by a successfully cast dart, a further solenoid S<sup>1</sup>, Fig. 4, may be energised. This solenoid has associated with it a clawer 14 having a nose 15 engaging the teeth of a ratchet wheel 16 carrying numbers 17, which are brought into view through an aperture indicated in broken lines at 18 in a facing board or the like on which the dart board is mounted.

In lieu of the tokens 9 it can be arranged that prizes such as packets of cigarettes or other suitable articles may be ejected by the solenoid core 8 into the delivery chute 11. Convenient means may be provided for illuminating the target 3 and a coin-freed mechanism may be combined with the mechanism above described and illustrated so that upon a coin of predetermined value being inserted in said coin-freed mechanism, the said mechanism renders the circuit of the one or more bulls 4 and the one or more token delivery mechanism and/or score indicators and also the illumination means for the target operative or "live".

A simple convenient arrangement of coin-freed or operating mechanism is shown in Fig. 5 wherein; 19 is a handle lever freely pivoted on a pivot spindle 20. On this spindle is also freely mounted a lever 21 carrying a pawl 22 engaging a ratchet wheel 23, which carries a further wheel or disc 24 having a projecting contact 25 adapted to be brought into contact with a contact strip 26. The lever 19 has a slotted part 19a adapted to receive a coin, indicated in broken lines at C and the lever 21 is provided with a slotted part 21a adapted to be engaged by the said coin C. When the coin is in the position shown in the drawing it forms a temporary locking connection between the levers 19 and 21 and when the handle lever is turned in the direction of the arrow, the pawl 22, through the rack wheel 23 and contact wheel 24, moves the contact 25 into engagement with the contact strip 26 and completes the operating circuit of the whole dart board and its associated devices as described.

It will also readily be understood that by associating different score indicators

such as is shown in Fig. 5 with each of the bulls 2 or 4 provided in the target 3, various scoring games, such as the well known cricket dart game, can be played with automatic changing visible scores and by further connecting up with said indicators one or more tokens or prize delivering devices, a token or prize can be automatically delivered to the storer of the highest total or a predetermined number.

Suitable devices such as floor contact members may be provided to assure that the darts are thrown from a predetermined distance from the target and means may be provided in conjunction with the coin-freed mechanism for preventing the token delivery mechanism from operating unless the requisite coin is inserted and the intended proper method of playing the game is observed.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. In or for a game of the kind referred to a target having a relatively moveable part adapted to be displaced by a successfully thrown dart and close an electrical circuit to operate a token or prize delivery mechanism.

2. A target as claimed in claim 1 having a relatively moveable "bull" which upon being displaced by a dart striking it, completes an electrical circuit and operates a token or prize delivery device, and/or a number changing score indicator, and/or an audible claim device.

3. A target as claimed in either of claims 1 or 2, which is primarily controlled by a coin-freed device.

4. A target as claimed in any of the preceding claims and which incorporates one or more "bulls" each comprising a moveable part of a suitable material to receive and retain a dart, a pair of electrical contacts adapted to be closed upon the bull being displaced by the said dart, and one or more solenoids or electro-magnets adapted to be energised upon the closing aforesaid of one or more pairs of the said contacts, to effect the delivering of a prize or token and/or indicate a score and/or operate further electrical apparatus.

5. A target having one or more "bulls" as claimed in any of claims 2 to 4 and wherein the front edge of the bull is bevelled or otherwise formed to prevent a dart from entering between the moveable part of the bull and the part in which it moves.

6. A dart board target having one or more relatively moveable "bulls" each

- or a selected number of which is adapted when displaced by a successively cast dart to close the circuit of a solenoid or electromagnet which operates a clawker intermittently to rotate a ratchet wheel provided with numbers which may be observed through an aperture in a facing board or the like on which the dart board is mounted. 25
- 5 7. A dart board target having a number indicating device, as claimed in the last preceding claim, constructed and operated substantially as described with reference to Figs. 1 to 4 of the accompanying drawings. 30
- 10 8. A dart board as claimed in any of the preceding claims and having a coin-freed or operating mechanism wherein the coin itself provides a temporary connecting means for locking together two normally relatively moveable members so that movement of one of the said members is transmitted through the coin to the other member to bring two contact members together and complete an electrical circuit which puts the dart board into an operable condition. 35
- 15 9. A dart board as claimed in the last preceding claim having a coin operating mechanism constructed and operating substantially as described with reference to Fig. 5 of the accompanying drawing.
- 20 10. An electrically operated dart board as claimed in any of the preceding claims and having a token delivery device constructed and operating substantially as herein described with reference to Fig. 1 to 3 of the accompanying drawing. 35

Dated this 29th day of August, 1938.  
FREDERICK EDWARD SPENCER.  
LEWIS HENRY COLTON.

[This Drawing is a reproduction of the Original on a reduced scale.]

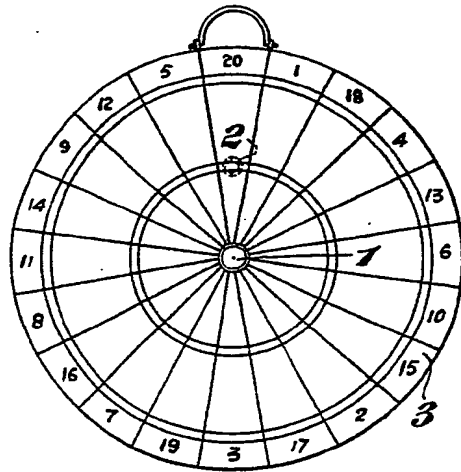


FIG. 1.

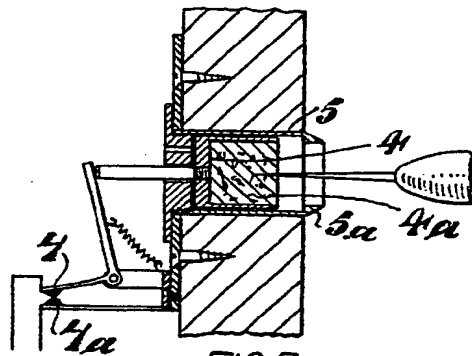


FIG. 3.

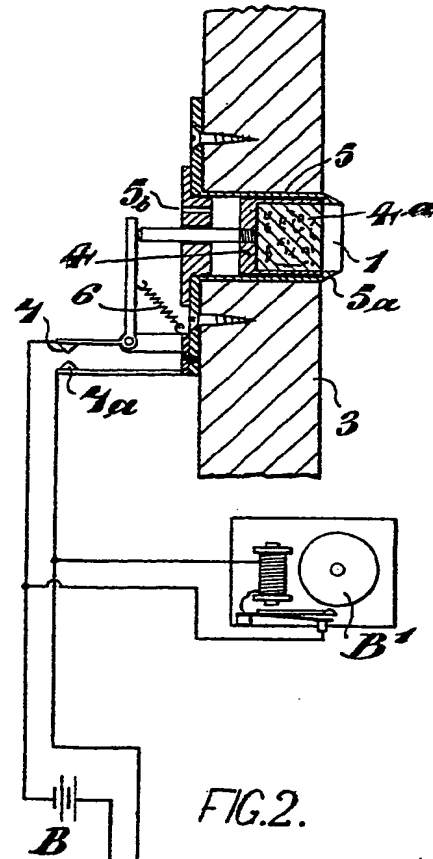
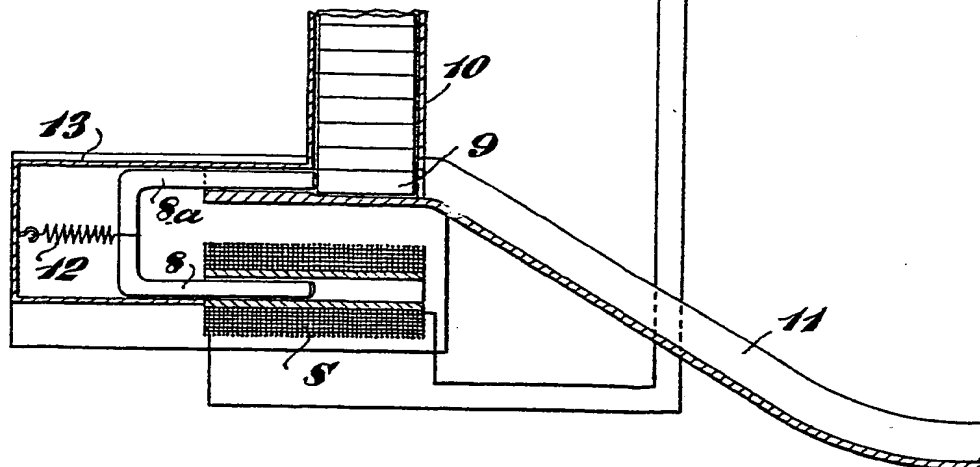


FIG. 2.



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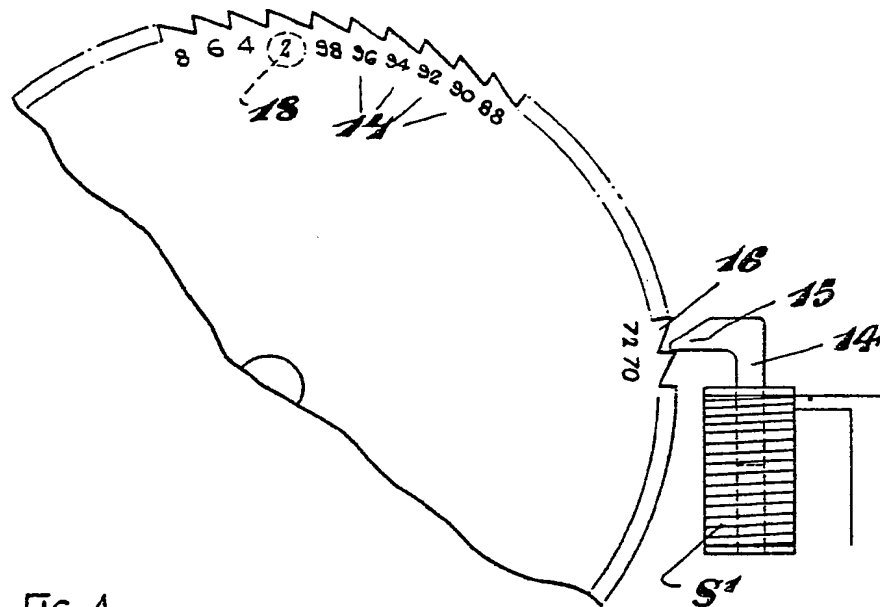


FIG. 4

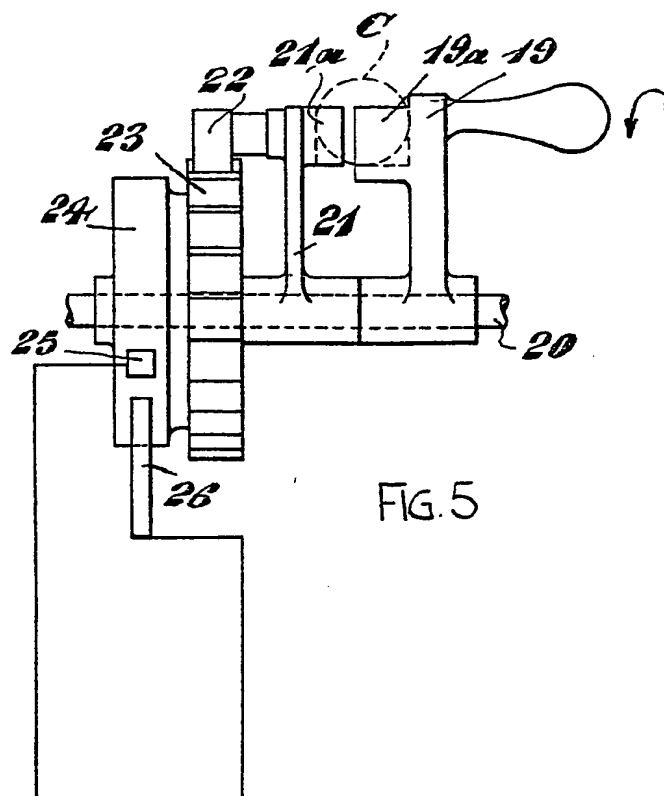


FIG. 5

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